

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XCVII.—THURSDAY, SEPTEMBER 6, 1877.—NO. 10.

FRACTURE OF THE PATELLA.¹

BY OCTAVIUS THORNDIKE HOWE, M. D.

THE following is an analysis of fifty-nine cases of fractured patella occurring in the Massachusetts General Hospital:—

Number of cases:	
Males	47
Females	12
Causes of Fracture:	
Direct blow	48
Muscular action	11
Character of fracture:	
Simple	56
Compound	2
Comminuted	1
Species of fracture:	
Transverse	51
Oblique	2
T shaped	2
Compound ²	2
Comminuted	1
A small fragment broken off	1
Refractures	8
Double fracture	2
Average amount of separation before treatment	1.1 inch.
Average amount of separation after treatment33 inch.
Bony union	2 (?)
Average length of treatment in the house	6 weeks.

Of the fifty-nine cases of fracture 81.4 per cent. were the results of a direct blow, and 18.6 per cent. were caused by muscular action. The greatest distance apart of the fragments before treatment was four inches, and the result one half inch separation. The greatest amount of separation after treatment was one half inch. In nine cases where the separation ranged from one to four inches the average distance between the fragments after treatment was two fifths of an inch. There were four cases where patients walked about on the injured leg for six or seven days and still got good union.

There were two cases of probable bony union. In the first case

¹ Graduation Thesis, Harvard Medical School.

² No particulars given.

there was a transverse fracture about the middle, but the fragments were held in such close apposition by the aponeurotic covering of the patella that it was only by crepitus that it was at first diagnosticated.

The second case was a particularly interesting one. The patient, a married woman, fractured her patella, and owing to pregnancy received no treatment. A year and a half after the accident she applied at the hospital. At that time there was an inch and a half separation, and the leg was almost useless. The joint was opened, a portion of each fragment removed with the bone forceps, and the parts were wired together. In six weeks the fragments were firmly united by apparently bony union.

One patient entered the hospital four times for fracture of the patella. The first fracture was a transverse one, and she was discharged in four months with good union. Six months after, she returned with a second fracture, the line of separation in this case extending downwards and outwards from the first. She was again discharged with good union. The third fracture, which occurred fourteen months after, was in the same place as the second, and also resulted well. The fourth fracture was at the lower border of the patella, and she was once more discharged with a good result. The first three fractures were from direct blows; the last from muscular action.

In a large number of cases there was considerable effusion into the joint, but this did not seem to interfere with the ultimate approximation of the fragments.

The treatment adopted was various: the leg was frequently put upon the Goodwin, McIntyre, or Whitten splint, and as soon as the effusion had subsided the fragments of the patella were drawn together by bandages or plaster in various ways. A ham splint with a figure eight bandage about the knee has been a favorite method of treatment, a new bandage being reapplied over the old as soon as it became loose. A ham splint merely, without any attempt to bring the fragments together, has been found to work well, the fragments falling into apposition of themselves.

In a certain number of cases apparatus designed especially for this fracture was used. The leg was kept on the splint or in the apparatus for a period of from three to eight weeks, and then a plaster or dextrine bandage was put on, which was worn for at least four weeks more; the patient was then encouraged to begin using the leg. Whatever the method of treatment, however, the results appear to be about the same. There is nothing in the record of the cases to show that anything was gained by the more complicated appliances.

In treating, then, a case of fracture of the patella we have three things to consider:—

- (1.) How to obtain the best result.

(2.) To do this with least pain and discomfort to the patient.

(3.) The simplicity and accessibility of the apparatus.

Probably for no other fracture have there been so many complicated apparatuses invented as for this, and if any of these possess preëminent advantages it is our duty to use them so far as lies in our power. But when we find the same results obtained by simple means, less annoying to the patient and accessible to all, we have no hesitation in deciding for the latter.

When called, then, to a case of this fracture our first thought is to make the patient as comfortable as possible. The leg should be placed on a ham splint, and bandaged so as to leave the knee exposed. If there is much effusion, ice-bags should be applied to the knee. The patient being kept quiet, then, the fragments will tend of themselves to draw together, and as soon as this is accomplished and union has begun some form of stiff bandage may be applied, as early, perhaps, as the third week. The stiff bandage should be kept on for a month or six weeks, and then it should be removed and the patient be encouraged to begin to use the leg. He should be warned that, however close the union may be at first, in all probability the interval will lengthen under use. The treatment by simple rest or by a ham splint and figure eight bandage is unsatisfactory certainly; but then, so are all the methods of treatment, and other things being equal the simplest is the best. In case the fragments are not approximated by these means some other apparatus can be tried, which may well be left to the ingenuity of the surgeon in charge.

I will close with the report of a case at the Massachusetts General Hospital, in the service of Dr. Cabot, in which an apparatus, so far as I know original with the writer, was used with good result. To any one who has used the short Dessault splint for fracture of the leg its application will be apparent. It is readily put on, is very comfortable to the patient, can be managed by any one, and does not need to be readjusted. It leaves the knee exposed, so that applications may be made to it if necessary, and brings the fragments together with a force at once powerful and easily controlled.

Patrick F., thirty-two years of age, while driving was kicked in the knee by his horse, causing a transverse fracture of the patella, the lower fragment being broken in two pieces. A temporary splint was put on the leg, and he was brought to the hospital ten hours after the accident. The knee was then very much swollen, and there was pain and exquisite tenderness in the neighborhood of the joint. There was about two thirds of an inch separation between the upper and lower fragments of the patella. The leg was put on a ham splint and ice-bags were applied. Two days later, the effusion having somewhat subsided, an attempt was made to bring the fragments into apposition. The apparatus

used was as follows: Two long, narrow side splints extended on each side of the leg from the middle of the thigh to about ten inches below the foot. These splints were connected at the lower end by a movable cross-bar, which could be fixed at any point by means of pegs. Through the middle of the cross-bar played a screw, to the end of which was attached a wire yard. The yard, of course, advanced or retreated with the turn of the screw.

Thus far it was simply a Dessault's apparatus. Two broad strips of plaster were started well up the thigh and fastened securely to within a short distance of the patella; these strips passed down the leg, to be attached to the wire yard at the end of the screw, thus furnishing extension. Similar strips of plaster, but somewhat narrower, were started on the leg and passed upward through slits cut in the upper pieces of plaster to be attached to the end of the splint; this supplied counter-extension. By turning the screw, then, the fragments of the patella could be drawn together by a force to be measured only by the strength of the apparatus and the patient's endurance. For the next three weeks the fragments were kept in close apposition without pain to the man. A dextrine bandage was then applied, and the patient was discharged.

Three weeks later the dextrine was sawed off, and firm union was found, the fragments being about one eighth of an inch apart.

EXTRAORDINARY TOLERANCE OF A POISONOUS DOSE OF CHLORAL HYDRATE.

BY PHANUEL E. BISHOP, M. D., PAWTUCKET, R. I.

On the evening of the 12th of July Mr. P. R., of Irish parentage, aged thirty-two, a glazier by trade, came into my office suffering from nervous prostration and loss of sleep, consequent upon the free use of alcoholic liquors. He had been drinking more or less every day since the 4th. He did not present any marked symptoms of delirium tremens. I prescribed strong coffee, beef tea, aromatic spirits of ammonia, and gave him twenty grains of Dover's powder to take at bed-time.

I saw no more of him until the next evening, when I was called to his home. I learned from his wife and others that he had not slept for sixty hours. He presented a typical case of delirium tremens with all the mental aberrations, illusions, hallucinations, etc., which usually accompany the disease. I wrote the following prescription, which is the one I usually give in like cases:—

R̄ Chloral hydrate	3 ss.
Ext. scutillariz fld.	3j.
Syr. zingiberis, adde q. s. ut ft. mist.	3ij. M.
S. A teaspoonful in an ounce of brandy every half hour until the patient sleeps.	

I was hastily summoned again shortly afterwards, and upon arriving found that in a few minutes after receiving the first dose he had seized the bottle from his wife's hand, and before he could be prevented had swallowed ten drachms of the mixture, making a trifle over eleven drachms in all. I immediately stirred three tablespoonfuls of ipecac root (about half an ounce) and one teaspoonful of the sulphate of zinc (fully one drachm) into about a pint of warm water, and with great difficulty compelled him to swallow it. It produced no effect whatever as far as emesis is concerned. I was unable to procure a stomach-pump.

A Catholic clergyman had been summoned, and, as I had unhesitatingly given my opinion that he could not survive, the last rites of his church were administered. Shortly afterwards he sank into a profound sleep, to arouse him from which many things were tried in vain.

During the first hour his pulse rose to the highest point, namely, 132. In the third hour it had come down to 88, and there remained unchanged, full and soft. The temperature was often taken, and never varied from 99° Fahrenheit. This is perhaps the most remarkable feature in the whole case, as I have always noticed a diminished temperature following even a dose of ten grains. He slept thirty-six hours. At the end of eighteen hours we were enabled to arouse him so that he could take liquid nourishment in abundance, but to keep him awake for a few minutes was simply impossible. I never before have witnessed such profuse diaphoresis as was presented in this case. During sleep the whole body was constantly bathed in a warm perspiration. I attributed this to the enormous doses of ipecac and zinc, and queried in my mind whether or not they exercised any influence in saving his life. When I had carefully ascertained how large a dose had been taken, I naturally supposed the mixture to be deficient in strength. I put one drachm into a draught for a lady, and she slept soundly for ten hours. Two days afterwards I was called to another man suffering like Mr. R. This man had not slept for thirty-six hours. Four doses given at intervals of fifteen minutes caused a natural profound sleep of eighteen hours' duration, followed by complete recovery. The amount taken by Mr. R., a trifle over *one hundred and sixty-five grains*, is the largest dose which was not fatal that I have ever heard mentioned or read of in any medical work in my library; and that there should not arise one single alarming symptom, such as diminished temperature, sighing respiration, a slow, feeble pulse, or pallor of the features, renders the case remarkable. It is needless to add that Mr. R. awoke entirely relieved from his trouble.

RECENT PROGRESS IN ANATOMY.¹

BY THOMAS DWIGHT, M. D.

Cartilage.—The apparent structurelessness of the ground substance of hyaline cartilage impresses one as an anomaly which is the more striking because cartilage is reckoned among the connective tissues, and presents in fibrous and elastic cartilage forms which are clearly transitional. During the last two or three years various attempts have been made to demonstrate some structure in the ground substance both by staining and dissociating agents. Silver has given some curious results, but none that can be considered above suspicion. On the other hand, the separating agents have shown that the ground substance can be transformed into bundles of fibres, and this result has been obtained by such various reagents that we cannot but admit that preëxisting elements are made visible. Ten per cent. salt solution, lime-water, baryta-water, and permanganate of potash have all been more or less efficient, and lately Tillmanns² has been particularly successful with *trypsin*, a digesting agent obtained from the pancreas and introduced into histology, we believe, by Kühne. Tillmanns has made thin sections of cartilage and treated them with trypsin for from one to three days, after which they were either examined at once or further treated with a solution of salt or of permanganate of potash. If after removal from the trypsin the fibrillar structure was not visible, a light tap on the covering glass was often sufficient to reveal it. As a rule nothing was to be seen of the cells, though their shriveled remains were at times observed. The ground substance consisted of bundles of delicate fibrillæ, which sometimes appeared to run parallel to one another, sometimes at right angles in a net-work, and again were arranged in lamellæ. According to this view the cells do not appear to be either in an intimate or very definite relation with the fibres; they are entirely analogous to the cells of connective tissue. Tillmanns believes that these fibres are held together by an interfibrillar connecting substance containing mucin, which is dissolved by this treatment. The essential difference between hyaline and fibro-cartilage is only in the greater quantity of this connecting substance in the former. It is plausible that during life this interfibrillar substance (*kittsubstanz*) is more nearly fluid than after death, and that it provides by absorption for the nutrition of the cartilage in which Tillmanns has failed to discover lymphatics.

Dr. Budge,³ without discussing the recent views of the structure of cartilage (indeed, the paper just referred to had not appeared), has en-

¹ Eleventh Semi-Annual Report.

² Archiv für Anatomie und Entwicklungsgeschichte. 1877. Heft 1.

³ Archiv für mikroskopische Anatomie, Band xiv. Heft 1.

deavored to demonstrate its lymphatics. He has met with remarkable success, and though we are inclined to differ from him in the interpretation of his results, we consider them all the more valuable that they seem to us perfectly harmonious with those of Tillmanns. Having removed a slice from the articular cartilage of a bone of a calf's foot in order to have a smooth surface, he introduced the bone into the end of an India-rubber tube which was fastened tightly around it. The cartilaginous end of the bone was inside the tube, which was partly filled with a solution of Prussian blue. This was subjected to moderate pressure for one or two days, after which sections were cut for examination. In those just below the surface the cells were more or less covered by the blue fluid, and from each of these spaces there went off into the ground substance a delicate net-work of blue lines, those from each centre uniting with others. Some time later he succeeded in injecting from the periosteal lymphatics the space around the cells at the border of ossification, but as he himself admits, these cells may be held to be in different relations from those of ordinary cartilage. He then tried a third method, namely, that of thrusting a small canula through the synovial membrane that still covered the articular cartilage of young animals, and injecting asphalt dissolved in either chloroform, benzole, or turpentine, the last giving the best results. These injections showed brown substance around the cells, and occasionally lines of dark granules in the hyaline ground substance. Budge labors to maintain that the minute canals are preëxisting structures, distended, it is true, by the injection, but in no way caused by it. "Thus," says he, "I think I have found the channels through which the nutrition of the cartilage is carried on. They are extremely minute canals which swell out at intervals into spaces to contain the cells. The cartilage cells are bathed in lymph, as those of connective tissue and bone are, and cartilage is traversed by lymph spaces like those tissues." We do not deny the general correctness of this conclusion, but we are not convinced that the channels through which the injection passed are properly to be called lymphatics; they probably are merely the spaces between the fibrillæ described by Tillmanns, and greater or longer continued pressure of the injecting fluid would probably show them in far greater numbers. The accuracy of Budge's results is beyond question; properly interpreted they give valuable support to Tillmanns' theory.

The Histology of the Alimentary Canal. — Biedermann¹ has undertaken some researches on the nature of the epithelium of the stomach which have led him to conclusions concerning the cells very different from those generally entertained. Histologists have long been familiar with the so-called goblet cells of the alimentary canal, which are commonly held to be cells that have burst, discharging the greater part of

¹ Sitzungsberichte der Akademie der Wissenschaften. Wien. Band lxxi. Heft 3, 4, and 5.

their contents. Whether or not they fill up again is undetermined. There has also been some dispute as to whether the free ends of the intact cells were to be considered opened or closed. This, of course, involves the old and unprofitable discussion of the existence of a cell membrane. That epithelial cells of the stomach and intestine ultimately have such a membrane is undoubted, but it is illogical to look on this membrane as an essential part of the cells when in reality it is due solely to changes in the outer part of the protoplasm. Biedermann has examined the epithelium of the stomach in a large number of vertebrate animals and in various ways. He states that the cells have side walls, but are open in front, that is, are not covered by membrane, but the orifice is filled by a stopper or plug of modified protoplasm. The protoplasm of the cell proper which lies at its base is granular and contains a nucleus and nucleolus; that of the plug is generally clear and often shows at the free edge a very delicate longitudinal striation, which Biedermann compares to that of the free border of the cells of the intestine. We cannot, however, admit that he has shown this striation to be independent of reagents. He proves that this plug is of a different nature from the remainder of the cell, as it is not affected by carmine, but is stained by an aqueous solution of aniline blue. Fine specimens of double staining may thus be obtained. In the stomach of a fasting animal the plugs project only slightly from the cells, but during digestion they increase in size. Biedermann denies, however, that the contents escape bodily from the cell, though he thinks mucus is secreted from the plug. The paper shows much careful work, but the conclusions are too much at variance with the usually received views to be accepted without further investigation.

Mr. Herbert Watney,¹ who has studied the minute anatomy of the alimentary, has also reached some novel conclusions. We regret that as yet only an abstract of his work has appeared. The most important feature of his paper is the description of a reticulum composed apparently both of fibres and small branched cells. This exists not only in the mucous layer but in the epithelial one running among the cells. In places it seems to form membranous investments surrounding the muscles of the mucous membrane, the blood-vessels, and lymphatics. In the lymphatics and veins the reticulum not only surrounds the vessels but enters their walls, penetrating even among the endothelial cells. Thus, as the author concludes, "the mucous membrane of the intestine is pervaded everywhere by a reticulum, similar to and continuous with that found in the lymphatic follicles of Peyer's patches. This reticulum is situated among all the other elements which are contained in its meshes. This is true of the epithelial cells, the muscle fibres, the cells of the parenchyma, the endothelial plates of the membrana

¹ Proceedings of the Royal Society of London. Vol. xxiv. No. 166.

propria, of the blood-vessels, and of the lymphatics." According to Watney, fat, when absorbed, travels by the reticulum. The only point in the chapter on the stomach which we need allude to is that the author, unlike Biedermann, finds the epithelial cells closed during inanition, and opened at their free ends during secretion.

(To be concluded.)

BOSTON SOCIETY OF MEDICAL SCIENCES.

REPORT OF PROCEEDINGS FROM JANUARY TO MAY, 1877.

D. F. LINCOLN, M. D., SECRETARY PRO TEM.

TUESDAY, January 30th. DR. WADSWORTH presented a patient, whose case was lately reported in the JOURNAL. A piece of skin from her fore-arm had been inserted into her lower eyelid to relieve the deformity of ectropion, resulting from a burn. When last seen, two months ago and four months after the operation, no hairs were observed on the implanted piece of skin; now there are some small ones nearly half an inch long. The cutaneous sensibility of the piece, tested with dividers, appeared much like that of the eyelid of the opposite side; the same was the case when one point of the dividers was placed on the old skin below the line of operation.

At Dr. Bowditch's suggestion the same test was then applied to the patient's fore-arm. The result showed that the implanted skin had not gained any acuteness of perception since its removal to the region of the eye; the skin of the fore-arm was originally possessed of unusual sensibility, the distance of tactile perception being only 13 mm., and that of the lower eyelid 12 mm. Upon the fore-arm and face of Dr. James the corresponding distances were found to be 30 mm. and 10 mm. respectively.

DR. BOWDITCH said that *muscular fibre* had lately been shown to possess the appearance of *heavy cross stripes*, alternately dark and light, the light being again divided by a very fine dark line into two zones. He was not aware that this appearance had ever been noted in *human* muscular tissue, but he had seen it in a case of epithelioma of the face, of which he presented a specimen by way of demonstration.

DR. DWIGHT said that the specimen was remarkable as resembling much more closely the muscles of an insect than those of a vertebrate. He had never seen an approach to such a division in a mammal.

DR. FITZ showed a specimen of *amyloid liver* stained with methyl-anilin combined with iodine, giving a violet color. The degenerated parts were colored carmine, the other parts violet or greenish. The specimen had been stained a month; its color was not deteriorated. The dye itself is a very dark purple.

TUESDAY, February 27th. DR. AMORY showed *photographs of certain microscopic specimens*, made by himself and his assistant, Mr. Hubbard; power 1500. The blood corpuscles of the sheep, the cow, and man were shown under a $\frac{1}{x}$ Tolles; that of the grouse under a $\frac{1}{x}$ Tolles; the former taken

with an amplifier, a condenser, and an eye-piece; the latter without an amplifier. There was also a negative from frog's blood, and a positive of the retina, of which a diagram drawn by Dr. Quincy from the same specimen was shown. The image is perfect in proportion to the fewness of the lenses.

Dr. Amory said that it was very desirable to photograph several kinds of blood in one plate or object. The micrometer drawn on the object-glass is also photographed, affording an instant test of size. The paper stretches slightly in pasting on.

TUESDAY, March 27th. DR. WARREN spoke of a specimen of round-celled sarcoma, infiltrating the skin and subcutaneous cellular tissue of the back, which he had shown to the society two years ago. Certain appearances had then called his attention to a peculiarity in structure, namely, a vertical arrangement of cells in rows perpendicular to the skin. He had since found a similar condition of things in other morbid growths.

He then read a paper,¹ of which the following is a brief abstract:—

The "*fat canal*" of the skin is a structure which he has not found described by any authority. It is not found readily in the hand; in the leg it is so short that it might easily be mistaken; it is best found in the thickened skin, as between the shoulder-blades.

A year ago, in examining a congenital *nævus*, he found blood-vessels passing into these canals. It was suggested that pus might come to the surface through these passages. To test the possibility of this he stretched the skin of a person dead within twenty-four hours across a cylinder, like the parchment of a drum; on the inner side of the skin an injection mass was placed for an hour and a half under pressure, to imitate the pressure of pus. The skin was then hardened and sections made. The vertical canals were found filled with the mass; and the same was the case, in a less perfect degree, when simple injection with a needle-syringe (*einstick*) was used. Perhaps the peculiar anatomical character of carbuncle might be accounted for by this structure. A carbuncle furnished by Dr. Gay shows a distribution of the pus which is analogous to that of the injection mass.

A vessel going from the base of the fatty duct to the base of the sudoriparous follicle, is generally found encircled by the blue mass.

The function of this structure may be that of furnishing nutriment to the hairs. It may also be mechanical, as the erector pili muscle is inserted at the base of the hair follicle and the apex of the fat-tube, and its pull is exerted in the direction of the length of the tube, so that its operation may be facilitated by the giving or yielding of the tube. One function of the erector pili is the pressure on the sebaceous gland, which usually lies in a position for ready compression.

Some of the specimens were from adults, one from a person aged fifty or sixty, one from an infant a few weeks old, and several from persons of fourteen or fifteen years. The injected specimen was from a very lean subject. There was quite a typical specimen from the breast of a female. Dr. Gay had once seen a well-developed carbuncle on the breast. Perhaps the peculiarity of anatomical distribution in certain pustular eruptions might be accounted for in this way.

¹ See JOURNAL for April 19, 1877.

DR. WHITE desired that those parts of the skin which are easily erected might be tested for comparison. Certain hairs in a thick corium can be erected in spite of its thickness; and further, the sebaceous follicles do not require for their nourishment a supply of *fat*. It would be well to examine pachydermata.

DR. FITZ suggested cases of dropsy of the skin as suitable for injection, and DR. CURTIS those of diffuse cellulitis or phlegmonous erysipelas.

DR. T. B. CURTIS exhibited *charts* designed to facilitate the comparison of different cities, or of the same city at different periods, in respect to *sanitary conditions*. The usual method of stating this is by giving the ratio of deaths to one thousand of population, or still better to every one thousand living at selected groups of ages. In the charts shown, the horizontal diameter of the paper was divided into lengths, proportionate to the number of population living at the different groups of ages; and each one of these lengths was carried up to a height proper to represent the mortality of that age considered by itself. Thus the base line of the age one to five would be broad and its height also great; the base of the age seventy to eighty narrow and its height very great indeed. The Boston chart presented was from the figures of 1855, that of London from 1841. The general death-rate of Boston was 25.4, that of London 24.2; but in Boston there is a very high rate in *infants*, and an excess both in breadth and height of column in *middle life*; in old age the columns were narrower and lower. Probably the old persons at that time were almost all Americans, of a proverbial longevity, it is true, but representing a class of persons whose value is not great, so that the Boston excess of mortality is compensated for only in figures. In 1875 Boston was approaching London in respect to the numbers and mortality at old ages.

DR. DRAPER showed a *cartographic tracing* of Boston *sanitary statistics*. The area of the city is divided into nineteen sanitary districts, of which the death-rates are calculated separately, and expressed in two curves. The rates are as follows:—

District.	Death-Rate per 1000.
Commonwealth Avenue	14.1.
Brighton	15.8.
Neck	16.3.
West Roxbury	17.5.
Hills of East Boston	17.6.
Beacon Hill	18.9.
Albany Railroad to Milford St.	19.4.
Lower East Boston	19.8.
Charlestown	20.
Mt. Pleasant and Mt. Warren	20.5.
Dorchester Heights and City Point	20.9.
Dorchester	21.2.
Washington Village	22.3.
Ruggles St.	22.3.
Whole City	23.4.
Leverett St.	23.3.
Old Mill Pond	23.9.
South Cove	26.1.
Lower South Boston	27.9.
North End	28.2.

DR. WADSWORTH remarked that the infants from the best districts were sent out of town in summer.

DR. CURTIS said that the chief causes for the seeming health of the South and West ends were the relatively small number of children and the large number of servants in the prime of life.

DR. WADSWORTH said these servants' deaths are credited to other districts.

DR. WARREN introduced MR. POND, who showed a *new sphygmograph*¹ invented by his father, Dr. Pond, of Rutland, Vt. The force of the arterial beat is transferred to a hollow glass rod, which floats in a tube of water, playing up and down. Its advantages consist in its readiness of application, its delicacy, its adaptation to a pen; it can be used with much facility after a little practice.

DR. DWIGHT exhibited a specimen of *spleen double-stained* after the Philadelphia manner, in a mixture of red and blue colors; the staining fluid is composed of carmine, borax, and water. As a rule the nuclei are colored red, the nucleoli and the fibrous tissue blue. He had not found it to work with certainty; it turned the nuclei of the nervous system blue at times.

DR. WADSWORTH confirmed this remark.

TUESDAY, April 24th. DR. DWIGHT presented *sections of the embryo of a cat*, $\frac{3}{4}$ " long; they were forty-seven in number, and extended from the neck to the pelvic region. They were imbedded in cacao butter, which worked very well. The staining was done with Norris and Shakespeare's mixture, which is very uncertain, but stains the nuclei exceedingly well. In the specimens the cartilage contained the only well-differentiated form of cell.

DR. WOOD showed *crystals of iodide of lead*, indicating how much danger may attach to the use of "*marbleized iron*" vessels. He obtained them by boiling acetic acid of a strength less than that of vinegar in one of these vessels. Within a few years a fusible glaze, composed of silicates of sodium and calcium, silicic acid, and borax, had been invented for coating iron vessels. In forty grains of candy he had found five milligr. of chromate of lead; this substance is poisonous though insoluble in water. In two cases young children were killed by probable doses of $\frac{1}{2}$ and $\frac{1}{4}$ grains of chrome yellow, in twenty-four hours and four or five days respectively. It is probable that the fatal effect is due to the corrosive action of chromic acid, which is set free in the stomach, since chromate of lead is readily decomposed both by the stronger acids and by alkalis.

TUESDAY, May 15th. DR. HAY showed an *apparatus for holding the two trial-glasses*, spherical and cylindrical, before an astigmatic eye in measuring its refraction by testing its vision. He thought such a firm support, allowing the inclination of the cylindrical axis to be varied at pleasure, and either glass to be exchanged for another, offered certain advantages in respect of ease and precision.

DR. BOWDITCH showed *writing in white ink*² *on a dark paper*; also, in order to illustrate the merits of the invention, two cards, one printed in the

¹ See JOURNAL, June 28, 1877, page 770.

² Made with bismuth suspended in a mucilaginous fluid.

ordinary way, the other with white ink on black card. Several members expressed a preference for the white letters on the card. He remarked that one of the factors in fatigue from long use is probably the amount of light entering the eye, in eyes abnormally susceptible, though the presence of light may be advantageous to a healthy eye. Dr. Bowditch had shown the letters to a class of medical students, of whom twenty-four preferred the white on black ground, thirty-two black on white ground, and fifteen preferred neither.

Dr. JEFFRIES would prefer black letters read through a blue glass.

Dr. HAY remarked that the macula was constantly in use in reading, and perhaps might be tried more severely by a white letter.

WATER SUPPLY AND SEWERAGE IN ATLANTA.¹

By the United States census, the population of Atlanta was, in 1850, 2572; in 1860, 9554; and in 1870, 21,789. This rapid rate of growth has been due largely to the development of traffic and concentration of business of all kinds at the point of union of three important railroads; and consequently the laboring population of blacks and foreigners has increased in undue proportion, so that the accumulation of filth in badly constructed privies and cess-pools, and the pollution of small streams by kitchen refuse, slaughter-house waste, and offal emptied into them, became such a serious evil that a commission was appointed to recommend some remedy. The results of their investigations are embodied in their report just published.

The city is situated on high land, and within its limits arise five brooks, any one of which may be stepped over, and all of which flow away from the city in different directions. The natural drainage of the soil being therefore good, the only problem is to dispose of the filth in the best possible manner, avoiding all danger to health, and doing away with the offensive sights and smells now so common in most American and European cities. How far this danger and offensiveness are serious evils in Atlanta we are left to our own inferences to estimate, probably because of inefficient registration of vital statistics in Georgia; but it is well known that in the various epidemics of cholera and yellow fever this city has suffered very little as compared with those which are near the coast or rivers, a fact which may be attributed chiefly to its situation and good soil drainage; for the domestic water supply is not in every way satisfactory, being chiefly from wells, and a certain number of cases of both diseases are from time to time imported by the railroads without causing a general outbreak, in spite of the filth there.

The volume before us contains two series of reports to the commission: one, by Dr. Rauschenberg, in favor of complete sewerage and sewage irrigation, — and he *seems* to have the better of the argument; the other, by Dr. Goldsmith, advising privies, cess-pools, odorless excavators, and common carts. It appears that the five small streams are already fouled by various kinds of liquid refuse, for which proper sewers ought to be provided, and it is difficult

¹ *Proceedings and Reports of the Sanitary Commission of the City of Atlanta, Georgia*, H. H. Dickson, publisher. Atlanta. 1877. Pp. 195.

to see why such sewers should not at the same time carry away the human excrement, that is, if a suitable piece of land can be got for irrigation, a point which is not satisfactorily answered, although the topographical sketch of the place suggests a favorable location for such a farm, or perhaps farms. Of course, Dr. Rauschenberg does not propose sewage farming as a lucrative business, but he appears to be informed that it is steadily gaining in favor as the best means, under certain conditions, of remedying certain evils. Without sewage utilization he naturally considers the introduction of good sewerage impracticable, for the precipitating processes seem to him apparently not worth even a trial. He would increase, too, the present supply of two hundred thousand gallons of impure water daily to a quantity sufficient for the whole city, beside purifying it by filtration, etc.

Dr. Goldsmith, on the contrary, thinks an adequate water supply almost, if not quite, beyond their reach, holds that the population of the city is too scattered to render sewerage easy or important, regards the pollution of the small streams as a greater evil than retaining the filth near the houses, considers sewage farming a chimera, and quotes many authorities to sustain his general position. His recommendations are made the basis of a majority report to the city authorities, in which, by the way, an excellent suggestion is made that liquid sewage be disposed of on garden plots, if dry removal be adopted, although no reason is given why systematic irrigation on a larger scale would not be as practicable as this. Dr. Rauschenberg alone signs the minority report, although City Engineer McDaniel presents a concise and strong argument in favor of sewers, even if it becomes necessary to irrigate or even to use one of the precipitating processes in consequence.

Without a better knowledge of Atlanta itself, it is impossible for us to adjudicate the question; but, if the course of other cities is followed, water-closets will in time be introduced, at least for the better classes; sewers will come afterwards, and then the question of sewage disposal will come up after the years of stench and soil pollution which apparently might be prevented by following the city engineer's and Dr. Rauschenberg's advice, to say nothing of the money which might be saved. The report contains a page of opinions from persons at a distance in regard to the requirements of Atlanta, which is a curiosity of sanitary literature, as showing how easy it is to arbitrate without investigation. The work, on the whole, contains a mass of useful general information, and is calculated to bring an important subject in a striking way before communities sadly needing more of the practical appliances which promote health. Not the least of its merits is that it presents both sides of the question.

THE PHILADELPHIA PATHOLOGICAL SOCIETY.¹

In the present volume are to be found the proceedings of this society for the year 1875-76. Although its size is not so great as that of its predecessors, it contains, as may readily be anticipated, a considerable amount of valuable material carefully digested and conveniently arranged.

¹ *Transactions of the Pathological Society of Philadelphia*. Volume Sixth. Edited by JAMES TYSON, M. D. 1877. Pp. 157.

That the members are not mere observers of fact is evident from their willingness not only to present theories but also to combat them, and the report of these discussions is not the least interesting part of the transactions.

As the value of such publications is largely dependent upon the facility with which they may be consulted, it may be mentioned that an index and table of contents are at the service of the seeker.

THE INTERNATIONAL OTOLOGICAL SOCIETY.¹

THIS report gives an account of the formation of the congress, and also comprises the communications read at its first meeting in New York, September, 1876.

The first part is taken up with an exhaustive report on the progress of otology by Drs. Burnett and Blake, such as has usually appeared in the transactions of the American Otological Society, and comprises a review of all the more important literature of the year. Then follow fifteen other articles on different subjects connected with the ear. As of special value in practice may be noticed Dr. Mathewson's method of drilling out exostoses of the external meatus by means of the dental drill, and Dr. Blake's article on the application of paper dressings to perforations of the membrana tympani.

Of the more strictly scientific articles the most important is that of Dr. Loewenberg, of Paris, on Gaseous Interchange in the Tympanic Cavity, which has since been read at the Paris Academy of Sciences. The whole volume is of interest and value to any one desirous of keeping up with the advance in the pathology and treatment of the ear.

THE ADMINISTRATION OF MEDICAL CHARITIES.

THE question of the administration of medical charities, owing to the increase in the number of such institutions, the additions of special departments, and the crowds of applicants for relief, has become so complex that we have as yet been able to see no method of reform which will commend itself strongly to all. The abuse of the out-patient departments and dispensaries which has obtained to so great an extent in London and in some of our large cities is no less glaring in Boston. A few years ago one of our leading physicians estimated that one hundred thousand persons received treatment free of expense in this city annually. Owing to the influx of foreigners, hard times, and the want of employment, that number has probably increased, and the dislike to calling on charitable institutions for relief, which was thought to be characteristic of the independent citizen, is a sentiment which no longer appears to prevail among the working classes to any great extent. How far this may have been brought about by the mal-administration and pauperizing tendency of our public charities it is difficult to say. We are satisfied, however, that a large proportion of these persons, from a third to a half perhaps, are able and

¹ *Report of the First Congress of the International Otological Society.* New York: D. Appleton & Co. Pp. 159.

might be willing, if they saw the way, to pay a moderate sum for medical treatment, but through ignorance and credulity they are more likely to fall a prey to the numerous charlatans with whom this community is infested than into the hands of those poor but honest young practitioners who naturally look to the humbler class of patients for their income and experience. Therefore they resort to the out-patient departments, oftentimes with the statement that they can pay "a little," but that they come because they hear that there are good doctors there and want an "opinion." One opinion, however, is not always satisfactory, and so they go the rounds. Thus, through the reputation of the hospital, the out-patient department is placed, to a certain extent, in competition with neighboring practitioners, much to the annoyance and somewhat to the loss of the latter. Then there are various private hospitals and dispensaries, which, by the offer of superior facilities for the treatment of special affections, make a bid for that class of cases, no doubt with great advantage to the patients as well as increased experience for the physicians in charge.

There is a great diversity of opinion with regard to the amount of injury which this state of things entails. Those who suffer or think they suffer in practice and pocket consider it as an unmitigated wrong. Those who have hospital appointments or private dispensaries are disposed, perhaps, to think it a necessary evil, while the clinical teachers, especially those who instruct in special branches, are dependent on these departments chiefly for material. The hospital trustees shrug their shoulders, console themselves with the vast amount of good done, or institute some quixotic method of remedy, and so it goes on.

With regard to reform, primarily, any movement which looks to the transfer of our surplus laboring population to a region where it can produce as well as consume should have the active coöperation of all our charitable organizations. It does not fall within our province, however, to discuss the feasibility of such projects, or the administrations of charities from a philanthropic point of view.

Under the present state of things some physicians are of the opinion that the resulting evil would be slight if the hospital out-patient departments and private dispensaries were closed, as an experiment at least, and that the Boston Dispensary, with its excellent organization, supplementing the large number of active young physicians who are waiting for practice, would insure proper medical and surgical treatment for most needy cases. The Dispensary is probably the least abused of our medical charities, but the number of patients treated is very large already.

Others think, on the contrary, that this would be a great injustice to many deserving objects of charity, especially to those suffering from diseases of the eye and ear and from surgical injuries, as well as to those who, though reduced to poverty, are still sensitive and have known better days.

It has been suggested that the medical treatment of the poor who are temporarily disabled and can be cared for in their own homes might be assumed by the city government. The Dispensary physicians, though in the service of a strictly private charity, are usually styled "city doctors" in the districts where they visit, and are not always exempt from the annoyances which

public office brings in the midst of a critical community, though they have none of the emoluments.

The provident dispensary system, conducted on the plan of mutual insurance, by which each member pays a small annual or monthly fee, the aggregate being sufficient for the payment of physicians' salaries, medicines for the sick, etc., appears to offer an opportunity for easy development and, under careful supervision, a suitable means of relieving the overcrowded hospitals. This system has been in operation to a limited extent in Boston for a number of years. We have not space to refer at length to the efforts made in this direction in London, New York, and elsewhere, but in Manchester, England, these associations have been most fully tried. The seven provident dispensaries in that city have a membership of about fourteen thousand persons, with an annual income of \$14,000. The decrease in the number of hospital patients during the last year was forty-one per cent. There are twenty-eight such dispensaries in London, and others in prospect.

We shall have more to say on this subject at some future time, as we believe that it is one of great importance to the hospitals and to the whole medical profession.

MEDICAL NOTES.

— The first regular meeting of the Suffolk District Medical Society will be held on September 29th.

— We reprint from *The Lancet* the following letter about the "homœopathic schism" from Dr. Wyld, vice-president of the British Homœopathic Society, with the editor's comments thereon:—

TO THE EDITOR OF THE LANCET:

SIR, — As a sequel to my letter in your journal of the 2d of June, I shall be obliged if you can insert the following form of resolution; and this I more particularly desire because my first letter emanated almost entirely from myself, but the present form of resolution has been signed by every one of my school to whom I have *personally* applied, and the names attached are those of our leaders.

The resolution is purely abstract, and the only four gentlemen of your school to whom I have shown it at once said, "If this represents fairly the views of your body there can exist no *logical* objection to our extending to you the freest professional intercourse."

Such being the case, and knowing that you guide the profession, I trust you will assist in establishing peace on this basis, believing, as I do, that it comprehends the entire quarrel, and must, if acted upon, end the schismatical element in question.

GEORGE WYLD, M. D.

GREAT CUMBERLAND PLACE, August 13, 1877.

(Form of resolution intended to be signed by both parties.)

We, the undersigned, believing medicine to be a progressive art and science, hold that it is competent for any qualified medical man to adopt any theory or practice which he believes to be best for his patients. Therefore the adoption of any theory or practice should not exclude any qualified med-

ical man from the freest professional intercourse, provided he does not trade on a distinctive name nor unprofessionally advertise his mode of practice.

(Signed) Frederick F. Quin, Edward Hamilton, M. D., Hugh Cameron, R. E. Dudgeon, M. D. Ed., George Wyld, M. D. Ed., William Boyes, M. D., Richard Hughes, L. R. C. P. Ed., R. Douglas Hole, M. D., F. Black, M. D. Ed., J. Hamilton Mackenzie, M. D., D. C. Laurie, M. D. Ed., D. Matheson, L. R. C. P. Ed., T. L. Marsden, M. D., T. Engall, M. R. C. S. Eng., Alfred Pope, M. D., R. Dyce Brown, M. D.

No logical objection could possibly exist to extending free professional intercourse to any properly qualified practitioner who can conscientiously and unreservedly subscribe his name to the above resolution; but it is logically inconsistent that such a resolution should emanate from a section of men who are, and long have been, the advocates and champions of a "system" of medicine which has always been judged unreasonable, absurd, and devoid of any scientific foundation, and which is now evidently dying of sheer inanition. If the signers of this resolution had the courage of their opinions, and could bring themselves boldly to give up a profession of the *homœopathic* system, and to cease all connection with *homœopathic* societies, hospitals, journals, and other publications, they would experience no difficulty in obtaining free professional intercourse, because they would no longer be homœopaths; but they deceive themselves if they imagine that homœopathy can ever be recognized as a part of scientific and rational medicine. — Ed. L.

— *The London Medical Examiner* reports the case of a young man who died of hydrophobia in London on Friday, July 13th. The deceased, when walking about three months before along the Westminster Bridge road, was bitten in the hand by a dog in a rabid condition. He went at once to St. Thomas's Hospital, where the wound was cauterized and other measures taken. The wound, it appears, never healed thoroughly, and on the previous Sunday symptoms of hydrophobia appeared. He rapidly grew worse, and died on Friday in great agony. *The Medical Times and Gazette* reports a case sent to them by Dr. Gunning, of India. A man forty years old was bitten in the knee four months before by a dog supposed to have been mad. Up to three days prior to his seeing him he had enjoyed usual health. He died forty-eight hours after the spasms of the glottis began.

The Lancet remarks: It is an undoubted fact that hydrophobia has been increasingly fatal in England in recent years. The annual death-rate from this disease to a million living, which, according to the registrar-general's reports, did not exceed 0.3 in the five years 1860-64, rose successively to 0.9 and 1.8 in the two succeeding quinquennials, and further increased to 2.0 in 1875, which is the latest year for which the returns are complete. In London six deaths from hydrophobia were registered both in 1875 and 1876; and in the first twenty-nine weeks of this year, ending on July 21st, nine had already been recorded, of which two were registered (in Bartholomew's and Guy's Hospitals) during the week ending July 21st.

— The son of the Prince of Wales is convalescent from an attack of typhoid fever. *The British Medical Journal* makes the following allusions to the case:—

The fever from which the heir presumptive is now suffering — the third of his line who has thus been afflicted within a period of sixteen years — was, it is believed, contracted at Sandringham; and this is a circumstance which will, of course, require careful local sanitary investigation. Typhoid fever being essentially a preventable fever, due to causes which, by perfect sanitary arrangements, may be held at bay, it is, we believe, proposed that Dr. Seaton, the head of the medical department of the Local Government Board, shall make a searching examination of the water-supply and other sanitary arrangements at Sandringham. Since the serious illness from typhoid fever of H. R. H. the Prince of Wales, the water-supply at Sandringham has been remodeled at considerable cost and trouble. It is stated, however, that, at the time of the recent visit of the prince and his family for some days to Norfolk, the works connected with the newly arranged water-supply were out of order, and recourse was had for a while to the source whence the water was drawn prior to the prince's purchase of the estate. The importance of a scientific investigation into the facts can hardly be overrated. It is not a little remarkable, and certainly a most painful coincidence, that the heir presumptive should thus early fall under the scourge of the same preventive zymotic disease which has so seriously visited the royal house of late years; and it is highly necessary that the precise meaning should be ascertained of so shocking a succession of sanitary mishaps.

— We copy the following extract from Peters's General History of Connecticut, originally issued in 1781, which has just been reprinted by the Appletons, with notes and additions added thereto, substantiating the author's statements: —

"Though Litchfield is (1781) the youngest county of Connecticut, yet in 1766 it set an example to the rest worthy of imitation. The province had always been greatly pestered by a generation of men called 'quacks,' who, with a few Indian nostrums, a lancet, a glister-pipe, rhubarb, treacle-water mixed with Roman bombast of *vena cava* and *vena porta*, attacked fevers, nervous disorders, and broken bones, and, by the grace of perseverance, subdued Nature, and helped their patients to a passage to the world of spirits before they were ready. The surgeons and physicians who were not quacks formed themselves into a society for the encouragement of literature and a regular and wholesome practice. But their laudable endeavors were discountenanced by the General Assembly, who refused to comply with their solicitations for a charter because the quacks and the people said, 'If the charter were granted the learned men would become too rich by a monopoly, as they did in England.' The answer to this question was, 'Would it not be better to permit a monopoly to preserve the health and lives of the people than to suffer quacks to kill them and ruin the province?' The reply proved decisive in that fanatical assembly, namely: 'No medicine can be serviceable without the blessing of God. The quacks never administer any physic without the prayers of the minister.' One doctor proposed the trial of a dose of arsenic — whether it would not kill any one who would take it, though twenty ministers should pray against it. He was called a profane man, the petition was rejected, and quackery remains (?) triumphant."

— *The Medical Record* contains the statement of Dr. Caldwell, of Iowa, to the effect that in 1862 he was present at the exhumation of a body which had been buried two years before. The coffin had sprung open at the joints, and the hair protruded through the openings. On opening the coffin the hair of the head was found to measure eighteen inches, the whiskers eight inches, and the hair on the breast five to six inches. The man had been shaved before being buried. In 1847 a similar circumstance occurred in Mercer County, Pa. In digging a grave the workmen came upon the skeleton of a man that had been buried ten years. The hair was as firm as during life, and had grown to a length of eleven or twelve inches.

MASSACHUSETTS GENERAL HOSPITAL.

SURGICAL CASES OF DR. GAY.

[REPORTED BY C. W. COOPER.]

Nævus. — A child five months old entered the hospital April 20th. At birth there was no sign of a nævus, but at the age of two months a small red spot appeared on the extremity of the nose, which grew quite rapidly into an erectile tumor. On entrance there was a bluish tumor as large as a filbert, not pulsating, reducible in size by pressure. Three days later the child was etherized, and the tumor transfixed in all directions with a large needle at white heat. All the vessels were obliterated in this way, and in a week the mass had the appearance of a large scab, which soon came away, leaving the nose in very good condition.

Injury to the Head. — The patient, a brakeman, while standing upon the top of a freight-car, was struck by a bridge beneath which the train was passing, and thrown to the ground. When brought to the hospital, two hours later, he could not be roused sufficiently to answer questions; breathing labored; eyes firmly closed; pulse 90, and strong. There were several contusions and ecchymoses on the face; eyelids much swollen and discolored; nasal bones fractured; the right pupil was dilated, and did not react to light. There was an incised wound six inches long over the frontal bone, semicircular in shape, running up into the hair an inch or more. Upon raising the flap the periosteum was found to be torn off from almost all the bone exposed, and near the centre there was a fracture of the outer table of the skull, following a curved line, about an inch and a half long. There was no displacement at the seat of fracture, but some hair was firmly held in the crack. The patient was etherized, and a small portion of the bone along the edges of the fracture was removed with the gouge and mallet to get rid of the hair lodged there; the edges of the wound were then brought together by the interrupted suture, and a cold-water dressing was applied. The patient was then placed in a darkened room, and absolute quiet was enjoined. On the next day he could be made with some difficulty to answer questions, and was rational. For two weeks the case progressed favorably; the wound united by first intention with the exception of a small space in the centre, where, by the retraction of the soft parts, the denuded surface of the frontal bone was exposed. The patient, though dull and

stupid in the extreme, was quiet and rational, and his pulse and temperature had come down to the normal point after a few days of surgical fever. At the beginning of the third week, however, he became even more dull than before, his temperature rose to 103° F., and he complained of general *malaise* and stiffness in the back of his neck and in his jaws. The record of the next week is as follows:—

December 1st. Stiffness in the muscles of the lower jaw; the mouth cannot be opened to its full extent. Sixty grains of chloral were given during the day.

December 2d. Mouth nearly closed by trismus; stiffness in the back of neck more marked. Eighty grains of chloral were given during the day.

December 3d. Eighty grains of chloral given; no change.

December 4th. Eighty grains of chloral given; no change.

December 5th. Eighty grains of chloral given; trismus slightly lessened.

December 6th. Ninety grains of chloral given; rigidity in neck and jaw much diminished.

December 7th. Eighty grains of chloral given; spasm of the muscles much relaxed.

December 8th. Eighty grains of chloral given; the patient can open his mouth quite well; the stiffness of the neck is nearly gone.

From this time the chloral was omitted, and the symptoms soon entirely disappeared, not to return.

A few days later, however, another complication arose: the patient had two severe chills in the forenoon, and his temperature went up to 104.5°. the pulse became rapid, and there was severe headache; more chills followed on the next day, with a temperature of 105°; and two days later a blush appeared about the wound, showing this fresh complication to be erysipelas. The blush spread quite rapidly over the head and face, and the constitutional symptoms continued severe. For an entire month the patient suffered from this attack of erysipelas, his temperature at evening ranging from 101° to 103°, and delirium being a symptom in the early stage. Quinia and stimulants were freely given, but his strength failed fast under the violence of the disease; an abscess which formed in the course of the attack tended still farther to reduce his strength. However, at the end of the month this last complication had exhausted its force, and the patient made a rapid and complete recovery; appetite and strength were regained, and, after the exfoliation of a small piece of the frontal bone, the wound healed, and he was discharged. Some months after he was found to be in good health, and again in the employ of the railroad company, the only apparent bad result of his accident being a slight impairment of memory.

Excision of Inferior Maxilla.—Mrs. M. entered the hospital April 16th. Two years before, a tumor as large as a peach had been removed from the lower jaw; the tumor proved to be a cystic growth upon a solid base. At that time the whole mass was excised, and a considerable amount of the bone upon which its base rested was cut away with the chisel. Notwithstanding the thorough-

ness of this operation, a few months after her recovery the tumor began to grow again in the same place; it increased in size very slowly but steadily, without constant pain, though at long intervals sharp, lancinating pains were felt. At the time of admission to the hospital this recurrent tumor was as large as a small orange, on the left side of the lower jaw, firmly attached to the bone, extending from the second bicuspid tooth to a point a short distance up on the ramus; the surface was oval, the mass firm; there was no tenderness and no fluctuation. On examination inside the mouth, the teeth of the inferior maxilla were found to be absent behind the second bicuspid on the diseased side; the space thus exposed presented a cavity with hard, everted edges and an ulcerated surface discharging pus.

Five days after entrance, the patient being etherized, an incision was made, following the contour of the jaw, from a point just below the ear to the commissure of the lips. The surface of the bone was carefully dissected clear without opening into the cavity of the mouth; an incisor tooth was then drawn, and the maxilla divided with a saw at that point; the bone was grasped with lion forceps and drawn outwards, the surgeon cautiously dividing all the soft parts that held it in position on the inside, keeping the knife close to the bone. The jaw was forcibly depressed, and the coronoid process cleared of the insertion of the temporal muscle; the condyle was twisted out, and the ligamentous fibres thus put upon the stretch were divided by the knife; the bone was then freed from the remaining attachments and removed; hæmorrhage was profuse, many ligatures being required. The edges of the wound through the cheek were united by the interrupted suture, and compresses wet in a solution of carbolic acid were applied. The progress of the case after operation was most favorable. In six days all the stitches had been taken away, and there was union by first intention throughout the line of incision, with a free discharge of pus into the mouth. In fourteen days the patient was sitting up, with scarcely a trace of the operation except the scar, and a few days later was discharged, well. The growth when examined under the microscope proved to be carcinoma.

THE SUMMER RESORTS AND SANITARIA OF THE WEST.

MESSRS. EDITORS, — Although the average Chicagoan is sure that his own city is the best summer resort of the West, a large number of our people spend a part or the whole of every summer out of town. The West is not lacking in summering places. What the East offers in sea-coast and mountains we make up in lakes and woods and hills. Some of our resorts, for the real pleasure they furnish, are little less delightful than your Eastern watering-places, but we have no such fashionable and much-frequented points — excluding Colorado and the Rocky Mountains — as the East can number by the dozen. Most of our resorts, such as they are, are sought for simple relaxation from care and city life; a few of them, and by a limited number of people, for health and mineral water.

A number of towns in Wisconsin by the side of some of the many beautiful

lakes of which that State can boast are very pleasant for modest and sensible people. Geneva Lake, Oconomowoc, Green Lake, Madison, Fox Lake, Dunt's Lake, and other places are now visited by large numbers annually, and they serve the purpose of summer resorts more wholesomely than any fashionable watering-place on earth. Spring Lake, Michigan, and several other points attract quite a number and entertain them in a quiet way.

The greatest sanitarium of the West is the mountain region of Colorado, which your readers are sufficiently familiar with.

The most thronged health resort we have this side the Rocky Mountains is Hot Springs, Arkansas. The springs at this place number over fifty, — all natural and situated near each other in a narrow valley, — and the water as it issues from the ground has a temperature of 90° to 150° F., the several springs differing within this limit. There are many bath-houses in the little town of four thousand inhabitants built over and around the springs, and crowds of visitors come here to be healed. Syphilis in some of its forms furnishes the largest proportion of cases, probably not less than three quarters, while chronic rheumatism and rheumatic affections of the joints make a majority of the remaining quarter. A few paralytic and other nervous cases are among the number.

The water is used almost exclusively for bathing; nobody attributes any particular virtue to it when taken internally.

No very accurate analysis of this water has been made. It contains less than ten grains of solid matter to the United States gallon, and most of this is lime salts and silica. There is a small quantity of carbonic acid gas, and there are said to be traces of iodine and bromine, but this is questionable.

The only conclusion at which one can arrive, then, is that the benefit invalids derive from the springs is wholly due to the warmth of the water used in bathing and the thoroughness and frequency of the baths. Probably the same patients would be equally benefited in any warm climate by the same number of baths in common well-water at an equally high temperature, provided the element of faith were added to the treatment, as well as the free dosing with iodine and mercury that nearly all these patients get — the syphilitic ones especially — at the hands of the local profession, to whom most visiting invalids go for advice.

A considerable company of hay-fever victims migrate each season to the neighborhood of the Straits of Mackinaw and the south shore of Lake Superior to stay until the time that brings cough, sneezing, lachrymation, and distraction has passed by. There is a large territory in this region wholly out of the range and reach of this complaint, especially if patients will go there before the annual attack begins. As visitors may find here some hunting and abundant trout, bass, and other fishing, and boating without limit, they have a pleasure resort as well as a sanitarium. Indeed, for real recreation for dwellers in cities and for wholesome outdoor sport few places can be more inviting than some points in this hay-fever-escape region, and each summer now finds here many hundred sojourners purely for recreation, besides those who seek relief from their sneezings.

It is not an uncommon practice for parties hereabout to go to these northern

shores with tents and all the paraphernalia of camping, and spend a month in midsummer in this delightful way.

Lake Michigan has many little bays along its northern shore, and is fed directly or indirectly by many trout brooks, so that fine opportunity is offered for this kind of summering.

Dr. Beard, it seems, gives the preference to Marquette, Michigan, as a Western place of escape from hay fever, but through those who have found relief at Mackinaw the latter region will strongly contest the claim.

The West is so fortunate as to have a large number of mineral springs. Analysis shows that the waters of some of them differ not very widely from some of the famous springs of the East and of Europe. It is difficult to get at the real merit and value there is in much of this mineral water. Certain it is that the water of some of the springs greatly advertised and lauded, and much frequented by invalids, is, when analyzed, not materially unlike the water of thousands of our hard-water farm wells.

In the aggregate, some thousands of invalids visit the springs each summer, and not a few in winter.

As may be seen from the inclosed table of analyses, few of these waters have saline constituents, so far as the chemists have discovered, that would suggest any therapeutical result further than that of a cathartic, diuretic, or antacid. Indeed, to account for the improvement in the average patient who visits our springs with benefit, it is yet to be shown that it is necessary to suppose any other influences than these.

A few of the waters contain iron in quantity sufficient for slight tonic effect, but most of the tonic influence manifested in the patients may fairly be attributed to the increased assimilation due to the diuretic and laxative action, and to the rest, recreation, and expectation. Some of the alteratives appear in the waters of a few of the springs, but their quantity is too insignificant for any effect that could be noticeable.

The springs at Waukesha, Wisconsin (Bethesda), attract a large number of invalids, some of whom are benefited, some injured, and some returned without effect. The water has a small fixed residue, and its table of analysis looks quite tame, yet its taste is smooth, and the quantity one can drink without a sense of distention or gastric oppression is remarkable; hence the diuretic effect is good. There seems to be proof that cases of diabetes mellitus have recovered under the free use of this water. The springs of Waukesha are natural, and have been known since the settlement of the country by the white man. Waukesha is a small place, but has fair hotel accommodations. The Bethesda water is industriously advertised, and large quantities are sold throughout the country.

Sparta, Wisconsin, offers to visitors not only springs strong in iron, — to the extent of reddening the banks of the streams that carry off their overflow, — but some very fine scenery. The town is situated in a beautiful and fertile valley surrounded by high bluffs, and a short distance to the north is a pile of rock called Castle Rock, six hundred feet above the river, from which the bluffs of Minnesota may be seen, twenty or more miles distant. The place has four thousand inhabitants, and good hotels. There is trout

fishing in the brook near by. The mineral water comes from artesian wells, of which there are a dozen or more, and the water is free for shipment as well as for use. Very little is, however, sent away, owing doubtless to the absence of any monopoly in the enterprise. The wells are about three hundred feet deep. The water is said to be magnetic as it flows from the wells, — a condition due probably to some physical effect of the process of delivering it through the long metallic tubing of the wells. There are several bathing establishments in town, of which one, at least, has facilities for the Turkish bath.

The water of Sheboygan, Wisconsin, is growing into substantial favor as a diuretic and laxative. It comes from an artesian well sunk in the public park in 1875, which is nearly fifteen hundred feet deep. There are several hundred invalids visiting this spring the present season. Two thousand gallons of the water are being shipped away per month. Sheboygan is a beautiful lake town, and it may soon be quite a resort.

Spring Lake, Michigan, has a mineral spring — magnetic — highly charged with salts, and has attracted, since its discovery several years ago, a large number of visitors annually. The scenery about the place is fine, the boating and fishing excellent, and the communication with Chicago by boat in the summer so easy that to these conditions must be attributed much of the popularity of the place as a summer resort. The water is magnetic as it flows from the well. The same thing may be said of the three or four springs at Eaton Rapids, Michigan. Strictly, however, the water is not itself magnetic, but it has the property or power of inducing a magnetic state in pieces of steel immersed in it.

The springs at both Eaton Rapids and Spring Lake are artesian wells, and are of an average depth of perhaps one hundred and sixty feet.

These towns have two thousand to three thousand inhabitants each, and are both blessed with hotels and bathing-houses.

The Glen Flora, and other springs at Waukegan, Illinois, the "Powell," and the fine "Macallister" springs, as well as the Siloam Spring of Milwaukee, are all natural springs. They have attracted large attention. The water from several of them is shipped away in considerable quantities. Waukegan is a small, quiet, and pleasant town on the lake shore. Several of our Western springs that have not been much noticed we may expect to hear of soon, judging from the chemist's work, if the specimens furnished him were not spurious. One of these is at Des Moines, Iowa. Its water is bitter, being highly charged with sulphate of soda, and for the small total of solid matter must be quite a laxative. Another spring is at Colfax, Iowa. Its water has similar properties to that at Des Moines. The spring is an artesian well three hundred feet deep, sunk in 1875 in prospecting for coal. Its water is said to be magnetic, and to contain much carbonic acid gas. Quite a number of invalids from the vicinity have visited it already.

Our Chicago chemist, James R. Blaney, who has lately analyzed the water of a spring at Libertyville, near this place, — the analysis of which is given in the table, — speaks of the water as remarkably smooth to the taste and delightful to drink, and as having a distinct sulphurous odor.

CHICAGO, August 15, 1877.

TABLE GIVING AN ANALYSIS OF MINERAL SPRINGS OF THE NORTHWEST.

Chemist.	Waukegan, Washoda Spring.	Waukegan, Glen Flora Spring.	Waukegan, Powell's Spring.	Waukegan, Macaulister's Spring, No. 6.	Waukegan, Macaulister's Spring, No. 4.	Sparta, I.	Shobergan.	Chandler.	Waukegan, Illinois Spring.	Kilde.	Kilde.	Raton Rapids, Mich. Mitchell House Spring.	Stirling Spring, Mich.	Wheeler.	Des Moines, Iowa. Bennett Spring.	Colfax, Iowa.	Blue Island, near Chicago.	Libertyville, Ill. Copeland's Spring.	Ottawa Water. Dr. Halse's Spring.	Waukegan, Fountain Spring, M. Latta.	General Lake, Wis. Sherman Springs. D. G. Whiting.
Temperature.																					
One U. S. Gallon has in grains as follows:—																					
Alumina.....	0.122	0.151	220	215	160		0.1283						Trace.	0.0158	121	220	120	0.00	273	597	595
Ammonia.....							Trace.						6.0509	6.0509	8.022	220	220	Trace.	3.748	18.778	12.551
Bicarbonate Sodium.....	0.042	0.116	16.557	12.787	15.511		0.5044		12.49	1.70	1.28	27.53	0.1995	0.1995	16.148	220	220	3.597	3.748	18.778	12.551
Barb. Iron.....	17.522	12.598					18.0585		7.557	25.88	27.53	6.58	0.064	0.064	16.148	220	220	4.011	3.748	18.778	12.551
" " ".....	12.588	11.091					0.1742		0.802	1.68	1.28	6.58	0.0647	0.0647	16.148	220	220	4.011	3.748	18.778	12.551
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DISLOCATIONS OF THE HIP.

MESSRS. EDITORS, — In the report of the proceedings of the Connecticut River Valley Medical Society, as given in the JOURNAL of August 23, 1877, Dr. Allen, of White River Junction, reports a "new method" for the reduction of dislocations of the hip-joint. Now this so-called "new method" seems to be but a clumsy imitation of that method the principles and practice of which were first given to the world by Dr. H. J. Bigelow, of Boston, in a work on the Hip-Joint, and which is now the recognized method not only in this country but in Europe among all the better surgeons. All due credit to Dr. Allen, but if he will take the trouble to read Dr. Bigelow's work I think he will be convinced that his "new method" is indeed but an imperfect repetition of that therein described.

HARVARD.

COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING AUGUST 25, 1877.

	Estimated Population, July 1, 1877.	Total Mortality for the Week.	Annual Death-Rate per 1000 for the Week.	Death-Rate for the Year 1876.
New York	1,077,228	596	28.96	27.46
Philadelphia	850,856	328	20.05	22.88
Brooklyn	527,830	296	29.16	24.31
Chicago	420,000	187	23.15	20.41
Boston	363,940	166	23.72	23.39
Providence	103,000	34	17.16	18.54
Worcester	52,977	28	27.48	22.00
Lowell	53,678	19	18.41	22.21
Cambridge	51,572	29	29.24	20.54
Fall River	50,372	33	34.07	22.04
Lawrence	37,626	17	23.49	23.32
Lynn	34,524	12	18.07	21.37
Springfield	32,976	10	15.77	19.69
Salem	26,739	15	29.17	23.57

BOOKS AND PAMPHLETS RECEIVED. — Some General Ideas concerning Medical Reform. By David Hunt, M. D. Boston: A. Williams & Co. New York: Wm. Wood & Co. 1877.

The Sanitarian for September. (For sale by A. Williams & Co.)

Traitement rationnel des Plaies. Méthode d'Aération Rapport de la Commission spéciale du Traitement des Plaies à la Société de Chirurgie de Moscow, 10 Janvier, 1877. Moscow. 1877.

Report on Obstetrics. By Edward W. Jenks, M. D. (Reprinted from the Detroit Medical Journal, September, 1877.)

The Relations existing between Eczema and Psoriasis. By Robert Campbell, M. D. (Reprinted from the Archives of Dermatology, July, 1877.)

Morphia in Childbirth. By W. T. Lusk, M. D., Professor of Obstetrics in Bellevue Hospital Medical College. New York: William Wood & Co. 1877.